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## **Philosophical Transactions**

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plication of Cole-leaves, a good quantity of sanious matter. And the Patient complaining also at that time of grievous interjuncture pains, especially vpon the *Tibia*, I suspected &c. and applied *Empl. de Ran*, \* \* \* and gave her 3. succeeding mornings \* \* \* for a dose. The third day, it wrought *sursum & deorsum* pretty briskly; after which her pains vanish'd and many of those *ulcuscula*; and her breasts (which, since her Case, formerly sent up, were grown considerably bigger and very painful) much less'ned, and her pains also; and she, though drooping much before, and out of hopes of life, exceedingly revived. This indicated to me, what I was further to do for her. I gave her on Sunday last \* \* \*; which wrought upward plentifully; and she daily gets strength since, and her Breasts abate. I designe to salivate her, in hopes to correct that vitious ferment, which is spued out of the *Genus nervosum* into the Breasts, and contributes much to those tumors. But I shall now stop my hand, &c.

*Plymouth* Septemb. 17. 1669.

#### *Some Reflexions*

*Made on the enlarged Account of Dr Witties Answer to Hydrologia Chymica in Numb 51. of these Tracts; chiefly concerning the Cause of the sudden loss of the vertues of Mineral waters.*

*These Notes were made by the Learned Dr Daniel Foot, in a friendly Letter of his (dated October 11th. 1669.) to the Publisher, as follows.*

Sir

YOur last publish'd *Transactions* N<sup>o</sup> 51. have administred the occasion, and the Candour, I know you possess, hath encouraged me to give you this trouble. In your enlarged account of D. Witties Answer to *Hydrol. Chymica*, p. 1039. l. 21. you say; *This I had not here mentioned but to introduce our Authors weighty remark; That these waters loose all their virtue, yea their quant and bulk also, though in Glasses and under the Hermetick seal, if removed from the fountain-head &c.* Now, Sir, 'tis a truth, if not univ'rsally, yet generally known and assented to by unlearned as well as learned, that some sort of Medi-  
cinal

cial waters loose their virtue, if remov'd to any considerable distance from their fountain head; but others do not, at least not so soon. To this last sort belong such, as are our *Barnet*, *Epsham* and *Dullidge* waters; to the other sort belong our

\* *This was in Numb. 51. by a mistake placed in Somers-et, whereas it lies in Dorset-shire.*

*Tunbridge*, *Astorp* and \* *Stall-bridge*-waters; and all such are here or else where: And the common usage of the Sick, taken from the advice of their Physicians, and the Experience of all, in repairing to those respective

places, sufficiently proves the common consent thereunto.

But though the effect be so plain and manifest, yet the cause thereof seems not to me so plainly discovered; and because you are pleased to your fore-cited words to subjoin these; *And even their quantity and bulk also, though in Glasses and under the Herm. Seal &c*: I suppose, you intimate and offer, that the cause of the loss of their Medicinal virtues is upon the loss of their quantity and bulk: which also you aptly strengthen by the authority of the famous Doctors, *French, ab Heer*, and *Frambesartus*; and then in a parenthesis you put altogether, and cautiously say (*doubtless thorough the loss of the Volatile Spirits*) &c. And in the beginning of the very next paragraph you go on thus; *Whatever these Spirits be, that will neither endure to travel from the Place, nor will be confined in any bottle, nor under any seal &c.* So that the sum of your *Conjecture* (for as other you propose it not) is, That this losse consists in the Avolation of some most subtile and penetrating Spirituous parts, not to be imprisoned by any inclosure imaginable, but will find their way out, and leave the waters bereft of virtue, and decreased in quantity too, and (what more is) perhaps of their weight also, especially if they loose of their quantity. But to this last you modestly add, *Here we want instruction, whether that decrease was as well of weight, as of bulk &c.*

That this Conjecture of yours concerning the Cause of the loss of virtues in these waters carried from their Spring, may be true, I do not absolutely deny, but further acknowledge, that it is the sentiment of very many, if not all, Physicians and Naturalists, that have concern'd themselves with the consideration thereof; and I my self have entertained the very same

thoughts of it, and doe not now but suppositively relinquish them. But having lately, in reading *Tachenius's Hippocr. Chymicus* (newly recommended by yourself in N<sup>o</sup>. 50. of your *Transact.*) found c. 16. somewhat relating to this matter; I began by the encouragement of his authority to resume some Conjectures touching the same, which I had, if not abandoned, yet kept supprest in silence, which indeed are of another kind, but how true I yet know not. Wherefore I thought, it might not be very un-acceperable to you, if I desired you, publickely to give notice of these Conjectures, that the Learned may reason and find out the truth of them; whence may result no few nor very unuseful discovery's for the increas of knowledge, the benefit of mankind, and the glory of the Creator of all. In order thereunto I desire, you will propose these or such like Queries;

1. Whether by Chymical researches it wesever yet or can be found, that such waters as the above-said, ever yielded either a Vinous or an Acid, or any other sort of Spirits, that were either inflammable, or un-inflammable, or flyiag over the Helma from the fire.

2. Whether all these sorts of Waters, when they are most closely stopt up, and so let stand, or conveyed to some distance, doe not let fall a sd iment (most commonly) yellowish, or of some such colour, when they are become effate in their vessels.

3. Whether, when they are let stand only, and not moved by carriage, they do not sooner become castrated, and sooner precipitate an *Ochre* to the bottom?

4. Whether such an *Ochre* is not found in all their Spring-heads, and Streams also; but more in the Head than in the Streams, especially if issued there-from to a good distance.

5. Whether it may not be found upon due Observation, that two Bottles of the said waters, whereof the one being industtously stopped, the other left unstopt, and both equally permitted to stand still or equally moved, will not equally loose their virtues Medicall in the same space of time, and have the same precipitated sediment, and be of the same taste, colour, and alike diminisht in quantity, with divers others such like circumstances?

6. Whe-

6. Whether two Vessels, diversified in their matter, and consequently in their parts, pores and figures of the whole (as e. g. a Glass-bottle and an Oxe-bladder, or any two such like) fill'd with such waters, will not yeild the like *Phænomena* in all circumstances, as in the 5th *Query* are mentioned?

7. Whether it may be devised, how to preven tall precipitation of a sediment in the Waters vessell'd up; and then to observe thereupon, whither their vertues would not be kept entire during such a prevention?

8. Whether any Observer ever found the Waters enervated but found withall an Ochre, let fall to the bottom or sides of the containing vessel?

9. To be brief, Whether the *Phænomenon* of loss of vertues in such Waters may by an *Hypothesis* of an intestine Precipitation of their parts, wherein those vertues consisted, be as well (if not better) explicated, than by the *Hypothesis* of an Avolution of Spirituous parts through all Vessels and closures whatsoever?

Which Hypothesis that it may be the better weighed, I shall only exhibit it, and leave it to the Ingenious and Learned to conclude concerning it.

*First* therefore it is generally received amongst most, especially the more polite, Chymical Authors and Students, That, if any Medical vertues be in Minerals or Metals, it consists in their Sulphurs; which are of a Volatile and Alcalisate property; especially when not intimately commix't with, or after commixtion perfectly freed from their Mercurial parts.

*Next*, its as much received, even to become a Cymical Maxime, That Acids and Alcalys mutually operate upon one another to a satiety, to an abating, and (if circumstances correspond) to an utter amission of their former activities, and lastly to a production of a *Tertium neutrum*.

Again they alike conclude, that Salts act best in a State of Solution. All which Premises thus concenter in this Hypothesis;

That the Waters, which *materially* make some Springs, passing underground by the veine of some Metall, which yet is *in fieri*, having first taken up of an Acide Salt which is in the Earth, thereby catcheth hold on the immature Sulphur of that Metal,

Mettal, and presently glides it along with it self to the Springs orifice, and from the moment of the Sulphur and Acide Salt's meeting and contact begins a mutual action and reaction upon one another which never ceateth; till both are imperceptibly spent, and blended into a new Body, which then the water lets fall, and we call an Earth, Ochre, or Sediment: After the production of which Ochre, the Medicinal vertues of the immature Sulphur is lockt up into the inseparable embraces of the A ide Salt, and so is lost, or at least disappears. But this mutual action and reaction may last, till the Waters issue out of the Earth, and for some small time longer, and so long their Medical vertues are to be imparted, and no longer.

This, Sir, is the Hypothesis of *Tachenius* (if I rightly apprehend him) which I send, not to have it Justle out the more received one, or any other that may be proposed; but that it may have its Tryall, and accordingly may live or dye. I could alledge more in its behalf, especially in the particular of such a Body, as we commonly call an *Ochre*; resulting from divers Experiments of Vitriol: but I have trespassed too much already to hope for pardon from any, but &c.

*An Accompt of two Books*

I. *GUAGING EPITOMISED*, by MICHAEL DART. London, Printed by W. Godbid 1669. upon one folio page.

A Table of Squares and Cubes is of general use, but more particularly in *Guaging*, for taking away *Proportional* work in computing the Contents of Brewers Tuns from inch to inch, or by as great portions as you please; or for making the Tables of Gallon-measure for Mr. *Oughtreds* Guage-Rod: Yea each kind of Table doth much expedite the *Guaging* of *Caske*, as may be seen in this Printed Sheet of Mr *Dart*, wherein he supposeth, that a Beer or Ale-Gllon contains (according to the late Establishment by Law) 282. Cubical inches; a Wine-Gllon, according to custom and Experiment, 281. Cubical Inches: And he takes an Example (of a *Canary* P.p.) whose diameter at the <sup>Bottom</sup> Head } is { 32 inches, and Length 44 inches.

And